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Wayne Bartholomew — **Poverty in Indiana**

Philip West — **Indiana and the Pacific Rim: Opportunities and Challenges**

Poverty in Indiana

In this issue . . .

Poverty, wealth, and economic development are all closely interrelated. The examination of the 1980 Census data that Wayne Bartholomew provides in this issue offers a statistical view of poverty in Indiana's counties at that time. Readers are cautioned to consider the data most carefully before drawing policy conclusions. The reduction of poverty remains a matter of national and local concern, but the way to that goal is filled with the brambles of tried and nearly forgotten programs.

One route from conditions that are less than desirable is improved trade and investment opportunities. Philip West invites Hoosier readers to look west to the Far East. Beyond the Pacific horizon are new economic forces of major importance to Indiana's industrial and agricultural capabilities. The sun will continue to rise from the Atlantic, but we may wish to follow its path to the potentials of the Pacific Rim.

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According to the 1980 census, 11.7% of the U.S. population in 1979 had incomes that placed them below the poverty level. In 1979 a family of four was classified as being in poverty if its income was less than $7,386. In Indiana 9.7% of the state's population were in poverty. Even though Indiana's incidence of poverty was significantly below the national level, it was still true that almost one in every ten Hoosiers was living in poverty in 1979.

National data show that the proportion of the population living in poverty increased in 1980, 1981, and 1982. In 1982 it was 15%. It is not possible to be sure that the incidence of poverty increased in Indiana exactly as it did in the nation, but, given the economic conditions of the times, it seems reasonable to assume that Indiana's poverty rate increased during the early years of this decade. This article will examine some of the characteristics of poverty in Indiana, attempting to identify some of its important factors.

Where Do Indiana's Poor Live?

The proportion of the state's population that is in poverty is not evenly distributed throughout the state. The incidence of poverty for various groups is shown in **Table 1.**

The incidence of poverty varies dramatically among the various counties of Indiana. Hendricks County had only 4% of its population in poverty in 1979, whereas Crawford County had 18.8% of its population in poverty. **Figure 1** shows the proportion of the population in poverty in counties where that population exceeded 10%. It is clear from Figure 1 that, while counties with double-digit rates of poverty are located throughout the state, they tend to be concentrated in the southern half of Indiana.

Explanation of Regression Equation

In an attempt to identify those factors that would explain the different rates of poverty, a series of regression equations was estimated using cross-sectional data from 92 counties of Indiana. All the data was collected from the 1980 census.

The poverty rate is a function of:

- PFNW, proportion of families with no one working;
- PWYR, proportion of persons 16 years of age and older who worked 50 to 52 weeks of the year;
- PB, proportion of blacks in the population;
- PLF, proportion of people living on farms; and
- PEEL, proportion of persons 25 years of age and older who had completed eight or less years of school.

The statistical analysis yielded the following results, where 18.77 is a constant and the t statistic appears in parentheses below the regression coefficients. The regression coefficient for each of the five independent variables is statistically significant at the 1% level.

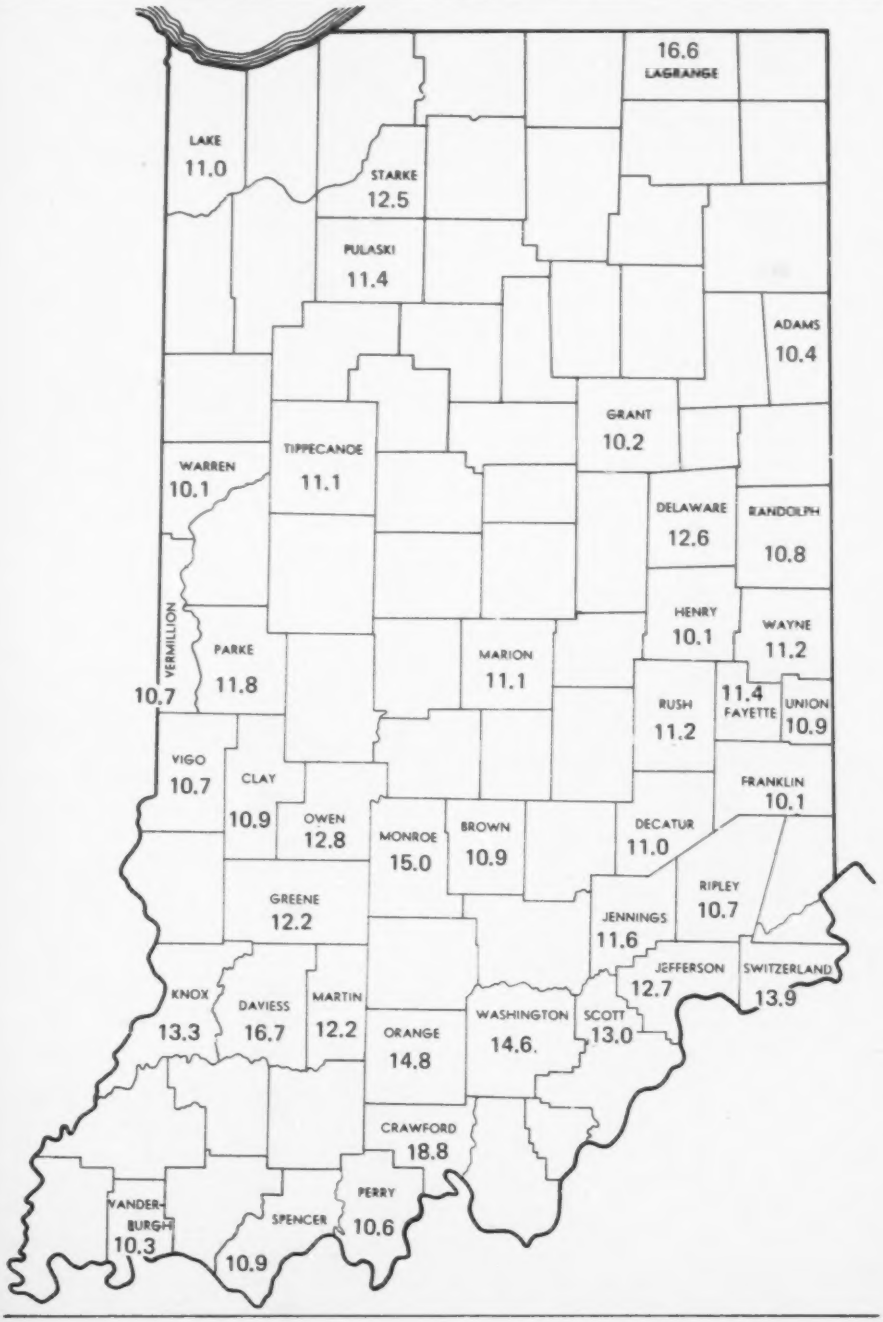
Table 1
Categories of Indiana Population in Poverty in 1979.

Category		*% in poverty*
Families		7.3%
Unrelated individuals		23.5
Persons:	Total	9.7
	Rural	8.0
	Urban	10.6
	White	8.4
	Black	24.1
	Spanish origin	14.9

Source: U.S. Bureau of the Census, Census of Population: 1980, *General Social and Economic Characteristics.*

Figure 1

Indiana Counties with Double-Digit Poverty Rates in 1979



$$PR = 18.77 + .3387PFNW - .2929PWYR + .1515PB + .0822PLF + .1929PEEL$$
$$(6.6) \quad (4.0) \quad (6.8) \quad (3.2) \quad (2.7) \quad (5.5)$$

The dependent variable is the percentage of persons living in poverty in 1979 (PR). The first independent variable is the proportion of families who had no one working in 1979 (PFNW). As one would expect, the relation between this variable and the dependent variable is positive. As the proportion of families with no one working rises, so does the proportion of the population in poverty. The coefficient of .3387 indicates that, for each 1% increase in the proportion of families with no workers, the poverty rate *increases* by about one-third of 1%.

The second independent variable, PWYR, is also a variable that measures the relationship between work and poverty. PWYR is the percentage of persons 16 years of age and older who were in the labor force and worked 50 to 52 weeks in 1979. The coefficient of -.2929 for PWYR indicates that, for each 1% increase in the proportion of persons 16 years of age and older who worked year-round in 1979, the proportion of people in poverty *fell* by about three-tenths of 1%.

As Table 1 shows, the incidence of poverty is much higher for black persons than for whites. The third independent variable, PB, measures the effect of the proportion of blacks in the population on the proportion of the population in poverty. The coefficient of .1515 indicates that, for each 1% increase in the proportion of the population who is black, the percentage of the population classified as living in poverty increases by about one-seventh of 1%.

According to Table 1, the incidence of poverty was lower for people living in rural areas than for those living in urban areas. However, when one examines the relationship between the rate of poverty and the proportion of people living on farms rather than just residing in a rural area, the relationship is positive. PLF, the fourth independent variable, is the percentage of the population who were living on farms in 1979. The positive coefficient of .0822 tells us that, for each 1% increase in the number

Other Variables That Were Considered

The following are additional independent variables that were considered in formulating the poverty model. Because a high level of statistical significance could not be shown or because of other statistical considerations, these were discarded.

Number of persons per household.
Number of persons per family.
Percent of persons 25 years and over who are high school graduates.
Mean weeks of unemployment in 1979.
Percent of all persons under 20 and over 64.
Percent of families with a female householder, no husband present, with own children under 18 years.
Percent of persons 18 years and over who speak a language other than English at home.
Percent of noninstitutional population between 16 and 64 years with a work disability that prevents them from working.
Percent of persons 16 years and over who are employed.
Percent of persons 16 years and over who were in the labor force in 1979 and usually worked 35 or more hours per week.

A Word of Caution

Working with aggregate data, numerous interrelationships between the variables being studied may be hidden. If the interrelationships are not recognized, it is possible to draw incorrect conclusions. One type of interrelationship is the intercorrelation of the independent variables, which does not seem to be a problem in the poverty model in this article. The simple correlation coefficients between the independent variables were .54 or smaller. Even though there seems to be no problem, the following possible interrelationships suggest caution in using the results.

- Four of the counties with double-digit poverty rates in 1979 have large residential colleges or universities. It is possible that the high poverty rate in these counties is at least in part a reflection of large student populations. To the extent that the high poverty rates are due to college students, the rates do not indicate a social problem.

- This model of poverty in Indiana implies that the incidence of poverty can be lowered by decreasing the number of families with no one working. Programs designed to retrain unemployed workers, increase worker mobility, or increase the employability of unemployed workers in other ways would undoubtedly reduce the number of families with no one working and therefore decrease poverty. However, some of these families with no workers may very well be retired people or individuals with disabilities that prevent their working. Policies designed to reduce poverty by increasing employment opportunities would decline in effectiveness with the increase in the proportion of families where, because of old age or disabilities, there were no potential workers.

- The poverty rate is based on cash incomes. Farm families are likely to have larger noncash incomes than most urban families. Therefore, the variable showing the positive association between the percentage of people living on farms and poverty may overstate the true extent of poverty for farm families. For example, Lagrange County had one of the highest poverty rates in 1979. To the extent that the high poverty rate in this county is due to a large number of Amish farm families, it does not have the same implications that it would for the other counties in Indiana.

- One might expect that the percentage of the population with eight years or less of education would be higher for the elderly than for the entire population. To the extent that low educational attainment is concentrated among the elderly, programs designed to reduce poverty by increasing the level of education in Indiana are likely to be ineffective.

of people living on farms in Indiana, the poverty rate increased by about eight-hundredths of 1%.

The fifth independent variable, PEEL, is the percentage of persons 25 years of age and older who had completed eight or less years of school. The regression coefficient of .1929 indicates that, for each 1% increase in the proportion of the population 25 years old or older who had completed eight years of school or less, the rate of poverty increased by slightly less than one-fifth of 1%.

The adjusted coefficient of determination, R^2, was .695. Thus, this regression equation explained almost 70 percent of the variation in the rates of poverty among the 92 counties in Indiana in 1979. The F statistic was 42.4, which indicates that the variation in the rate of poverty that this regression equation was able to explain is statistically significant at the 1% level.

The accompanying box points out some possible interrelationships among the independent variables in this study. These "Yes, but . . . " caveats indicate areas where it might be possible to draw incorrect conclusions if data are analyzed in splendid isolation.

Policy Implications

Based strictly on the size of the coefficients in the regression equation, it would appear that the largest reduction in poverty would come by increasing the proportion of families with at least one member in the labor force. Examples of national, state, or local policies that would reduce poverty in Indiana are those that result in more jobs and/or job retraining programs for the unemployed.

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Educational attainment is the next area on which to concentrate. Because the regression results indicate that the rate of poverty increases when people have eight years or less of formal education, any successful attempt to reduce the dropout rate in Indiana's high schools would be an important step in reducing poverty in Indiana. Regression equations (not contained in this article) that included an independent variable for the proportion of the population graduating from high school indicated that graduating from high school was associated with a reduced rate of poverty.

". . . any successful attempt to reduce the dropout rate in Indiana's high schools would be an important step in reducing poverty in Indiana."

The positive statistically significant regression coefficient for blacks would suggest that policies designed to eliminate unequal employment opportunities for black workers would have significant positive effects in reducing poverty.

Finally, because living on a farm is positively associated with poverty in Indiana, poverty would be expected to rise during periods when the farm sector is experiencing economic pressures. Policies targeted to farmers, especially small farmers, would have a small positive effect in reducing poverty.

There is a second way of examining how various methods of reducing poverty would affect the rate of poverty in the 42 counties that had 10% or more of their population in poverty in 1979. The regression coefficients can be used to calculate the change in the rate of poverty for each of the 42 counties if each has the same characteristics as the state with respect to the five independent variables specified in the regression equation. **Table 2** presents the results of these calculations.

A negative coefficient in Table 2 indicates that, if the population for a particular county were to change, making it equal to the average for Indiana, it would reduce the incidence of poverty in that county. For example, the -1.15 coefficient for Adams

Table 2

Changes in Poverty Percentages if State Averages Prevailed (Counties with 10% or More in Poverty in 1979)

County	*PFNW*[1]	*PWYR*[2]	*PB*[3]	*PLF*[4]	*PEEL*[5]
Adams	.34	.56	1.14	−1.15	.26
Brown	− .98	− .64	1.12	.02	.18
Clay	−1.02	1.00	1.08	− .37	− .23
Crawford	−1.88	−1.58	1.12	− .34	−3.68
Daviess	−1.83	.01	1.08	−1.08	−1.06
Decatur	− .11	1.36	1.14	− .91	− .90
Delaware	− .33	−1.87	.24	.19	.22
Fayette	− .25	−1.14	.89	− .09	−1.14
Franklin	.48	.15	1.14	− .78	−2.09
Grant	− .04	− .15	.15	.05	− .10
Greene	−2.05	− .23	1.14	− .37	−1.05
Henry	− .86	−1.12	1.00	− .22	− .88
Jay	− .23	.83	1.11	− .92	− .68
Jefferson	.05	− .74	.94	− .38	− .52
Jennings	− .05	.45	1.00	− .46	−1.24
Knox	−1.38	− .81	.97	− .23	− .67
LaGrange	.39	− .21	1.14	−1.73	−2.18
Lake	− .48	.44	−2.51	.38	− .30
Marion	.02	1.01	−1.94	.41	.35
Martin	− .19	.04	1.12	− .48	−1.61
Monroe	.08	−4.77	.74	.29	.92
Orange	− .68	−1.54	.95	− .37	−2.26
Owen	−1.09	− .43	1.11	− .64	− .98
Parke	− .84	.42	1.09	− .78	.46
Perry	− .97	.89	1.12	− .17	−2.59
Pulaski	− .70	.61	1.08	−1.61	− .75
Randolph	.16	− .31	1.11	− .89	.19
Ripley	− .57	1.03	1.14	− .86	−1.91
Rush	− .29	.80	1.02	−1.28	− .32
Scott	−1.30	− .80	1.14	− .10	−3.21
Spencer	.02	− .25	1.05	− .88	−1.54
Starke	−1.28	−1.08	1.12	− .37	−1.87
Sullivan	−1.41	− .49	1.12	− .56	− .14
Switzerland	−1.38	− .89	1.11	−1.92	−2.49
Tippecanoe	.96	−3.35	.88	.19	1.15
Union	.38	.45	1.09	−1.14	− .35
Vanderburgh	− .71	.95	.06	.36	− .65
Vermillion	−1.49	.31	1.12	− .19	−1.23
Vigo	− .63	−1.15	.30	.23	.35
Warren	.61	.22	1.14	−1.45	− .25
Washington	− .88	− .12	1.14	− .89	−2.52
Wayne	− .46	.47	.36	.05	.07
Number with neg. coefficient	31	22	2	32	33
Average % reduction	− .87	−1.08	−2.22	− .74	−1.26

1. Percentage of families with no one working in 1979.
2. Percentage of persons 16+ in labor force working 50-52 weeks.
3. Percentage of blacks.
4. Percentage of people living on farms.
5. Percentage of persons 25+ with eight years of education or less.

County indicates that, if the proportion of people living on farms in Adams County were the same as for Indiana as a whole, poverty in Adams County would be reduced by 1.15%.

Table 2 indicates that the greatest reduction in poverty in the high-poverty counties of Indiana would come from reducing the proportion of the population with eight years or less of formal education to the same level as the state average. If the 42 high-poverty counties in Indiana all had the same proportion of their population with eight or less years of education as does the state of Indiana as a whole, 33 of them would experience a reduction in the incidence of poverty. Furthermore, the average reduction in the poverty rate for these 33 counties would be 1.26%.

". . . the greatest reduction in poverty in the high-poverty counties of Indiana would come from reducing the proportion of the population with eight years or less of formal education to the same level as the state average."

In 32 of the 42 high-poverty counties, poverty rates would decline by .74% if the proportion of their populations living on farms were reduced to the state average. Thirty-one of the high-poverty counties would experience an average decrease of .87% in the incidence of poverty if the proportion of families with no worker were reduced to the state level. Slightly more than half of the counties with double-digit poverty levels would have their poverty rates decline by an average of 1.08% if the proportion of their population aged 16 years and older who worked 50 to 52 weeks were increased to the state level. Only two counties, Lake and Marion, experience high-poverty levels associated with having a larger proportion of black population than the state average.

To summarize, policies designed to increase the proportion of people graduating from high school, to increase availability of jobs, and to aid the farmers who are unable to earn incomes above the poverty level appear to be the most promising methods of reducing poverty in Indiana. □

Indiana and the Pacific Rim: Opportunities and Challenges

Philip West

Philip West is director of the East Asian Studies Center at Indiana University, Bloomington, and an associate professor of history and of East Asian languages and cultures. This article is based on a talk given at the Workshop on Indiana and the Pacific Rim, April 10, 1985, at Indiana University—Bloomington. A revised version was delivered at the World Trade Club in Indianapolis on September 18.

Although international trade is thousands of years old, its role in spurring tremendous growth in recent years in the economies of the world and of our state is not well enough known. In 1970 American two-way trade with the rest of the world was approximately $80 billion. By 1984 it had grown to almost $500 billion, a sixfold increase. The increase is similar over the same years for the state of Indiana.

The countries that have fueled this rapid increase in trade lie in the northern arc of the Pacific Ocean. These include the United States, which is the world's largest market, Japan, Taiwan, Korea, China, and other Asian Pacific nations that are the fastest growing economies in the world. The dynamic Asian countries have produced a decisive shift in world trade patterns in the direction of the Pacific (see **Table 1**). These changes are forcing us to adjust our perceptions of foreign trade, our perceptions of Asian neighbors whose cultures are very different from our own, and our perceptions of ourselves. We have made some progress in making these adjustments, but there is still a long way to go.

In recent months the louder cries for protectionism have drowned out the opportunities that knock within the Pacific Rim. Protectionism threatens to overshadow the benefits of international trade. The American trade deficit, which this year may run as high as $150 billion, has stolen center stage in the discussions on trade. Protectionist cries are directed particularly against Japan, but our trade deficit with Taiwan and Hong Kong, in proportion to total trade, is much larger. The deficit is in fact a problem in 1985 with all our Asian Pacific trading partners. The important questions we need to be asking are, What are the causes of this trade deficit, and how can we come up with more than short-term solutions?

The wave of protectionist sentiment which has swept through Congress, if translated into law, would threaten the system of international trade as we know it. It is a system that, despite the burden of our current trade deficit, has helped more than it has harmed the American economy. It is a system, furthermore, that in recent weeks has allowed market forces to improve the performance of American exports.

If protectionism were to win the day, it would hurt the European economies, which generally are in greater difficulty than we are, and it would wipe out the delicate trust in trade across the Atlantic. If the Jenkins bill on textiles, which currently has 350 co-sponsors in both houses, were put into effect, it would provide some temporary relief to the deficit and to unemployment in this part of the economy. If enacted, this bill likely would reduce American imports of textiles from Japan by 25%, from China by 60%, and from Indonesia by 89%.[1]

1. *Far Eastern Economic Review* (hereafter *FEER*), September 5, 1985: 53.

Table 1

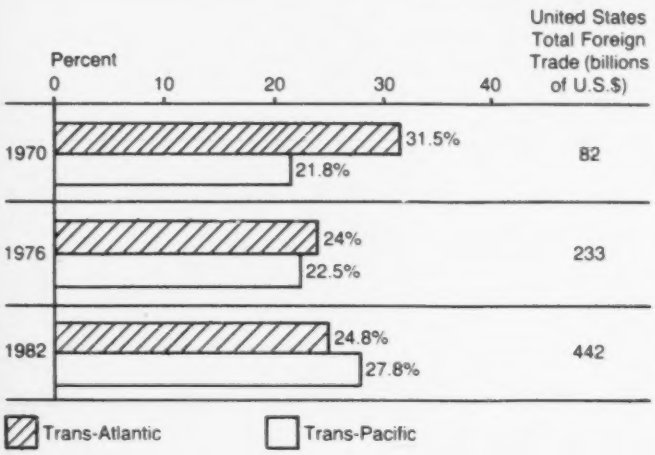
Population and Growth of GNP on the Pacific Rim

Country	Population, 1981 (millions)	Growth of GNP (average 1970-81)
Hong Kong	5.2	9.9%
Taiwan	18.5	9.8%
South Korea	38.9	9.1%
Singapore	2.4	8.5%
Malaysia	14.2	7.8%
Indonesia	149.5	7.8%
Thailand	48.0	7.2%
Philippines	49.6	6.2%
China, PRC	991.3	5.5%
Japan	117.6	4.5%
Australia	14.9	3.3%
United States	229.8	2.9%
New Zealand	3.3	2.0%

Source: World Bank, *World Development Report, 1983.* Figures on Taiwan are from the *Far Eastern Economic Review Yearbook.*

Figure 1

Shifts in United States Trade, 1970 to 1982

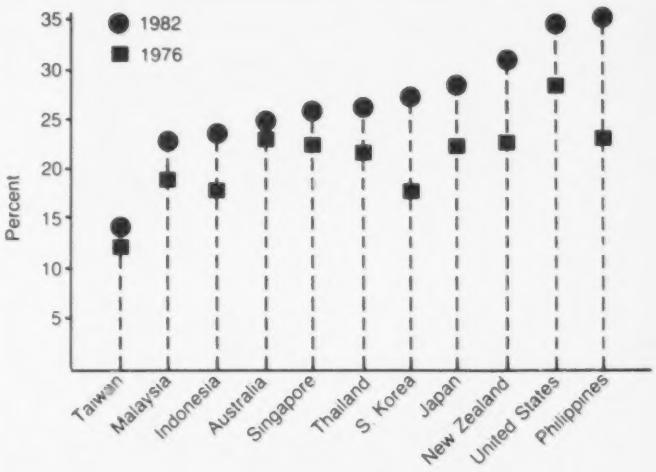


Trans-Atlantic includes all of Europe, except Eastern Bloc countries
Trans-Pacific consists of Japan, ASEAN, Asian NICs, China, PRC, Australia and New Zealand.

Source:
Direction of Trade Statistics Yearbooks, 1970-76 and 1983, International Monetary Fund; *The Trade of China (Taiwan District), 1982,* Inspectorate-General of Customs, Taiwan.

Figure 2

Services as Percentage of Total Trade in Goods and Services (1976, 1982)



Services also include shipping and other transportation, investment income, and travel, in addition to general service trade.

Source:
Balance of Payments Statistics Yearbook, 1983, International Monetary Fund; *Taiwan Statistical Data Book, 1983,* Council for Economic Planning and Development.

But the gains would be small compared to the backlash we might face. Protectionism generally would hurt the American consumer, whose "good life" is often measured by the abundance of high-quality goods purchased at bargain prices. These goods range from clothing to consumer electronics to cars. The worst effect of protectionism would be to sustain some sectors of the economy where productivity has declined, where management has become lazy or overconfident, and where the work force is not happy even when wages are among the highest in the world.

Whether or not the President is able to withstand the pressures for protectionism, international trade is likely to continue to expand and benefit participating economies. The Pacific Basin is the place in the world where these opportunities are likely to be the greatest. The challenge for Indiana firms is to recognize the unique opportunities for trade on the Pacific Rim and to plan for the long term.

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Opportunities in the Asian Pacific

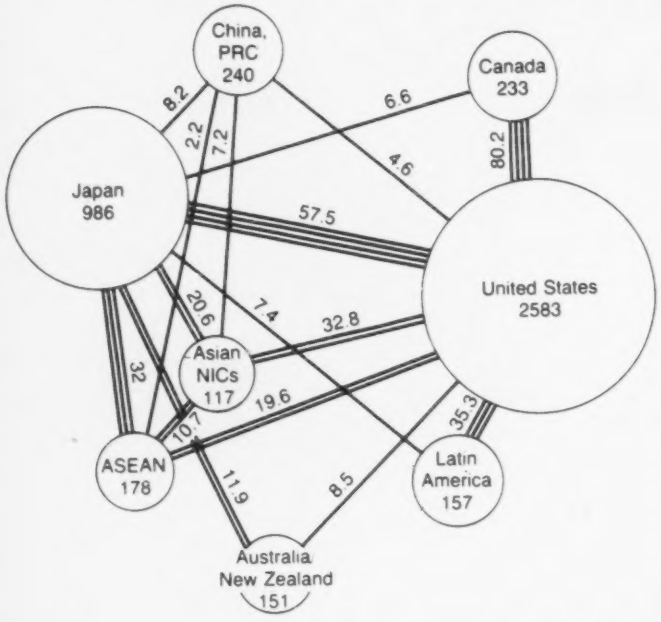
In the late 1970s annual U.S. trade with the nations of the Western Pacific surpassed annual trade with the historical trading partners of the Atlantic. In 1970 31.5% of total U.S. trade was trans-Atlantic; in that same year, 21.8% was trans-Pacific, not including trade with South America and Canada. By the late 1970s the trade volume was equal over both oceans, but by 1982, the Pacific had surpassed the Atlantic in trade volume by $13 billion (see **Figure 1**).

The actual volume of trade was considerably higher because the figures cited here are only for trade in goods. They do not include trade in services. Services as a percentage of total trade with the Pacific Basin countries averaged 20% in 1976 and increased to 27% by 1982 (see **Figure 2**).

Trade with the Pacific, in both goods and services, has grown and is expected to continue to grow at a much higher rate than with Europe or with any other part of the world. By the end of this decade, American trade across the Pacific may be twice the volume of our trade across the Atlantic. In the public mind this economic dynamism has centered primarily on Japan. The Japanese economy is second in size only to the United States in the free world, and Japan has become our second largest trading partner (see **Figure 3**).

Other Asian countries are also experiencing rapid growth and, with their trade-

Figure 3
Trade Relations, 1982



The circles show relative size of real Gross Domestic Product at constant 1980 prices, expressed in billions U.S. dollars for 1982, for each country or cluster of countries. The figures for each trade line are shown in units of billions U.S. dollars, and they include total trade volume, imports and exports.

In 1982, U.S. exports to the Pacific Economic Community area (excluding Canada) accounted for 32.8%, exceeding its exports to the European Economic Community, which stood at 22.6%.

Source
Direction of Trade Statistics Yearbook, 1970-76 and 1983, International Monetary Fund; *The Trade of China (Taiwan District), 1982*, Inspectorate-General of Customs, Taiwan; *National Income of the Republic of China*, December 1982; *International Financial Statistics Yearbook, 1983*, International Monetary Fund; *Quarterly Economic Review, Annual Supplement 1983*, The Economist Intelligence Unit.

oriented economies, are becoming increasingly involved with the United States. These include Taiwan, Korea, Hong Kong, and Singapore, sometimes referred to as the Asian NICs or newly industrialized countries. The American trade deficit with these four countries in 1985 is projected to be $25 billion, roughly half the deficit with Japan.

These dynamic economies and expanding consumer markets also include the People's Republic of China (PRC), where trade is still only half that of Taiwan but is rapidly growing. If China continues to enjoy its present rate of economic growth, by the turn of the century its market may be comparable to Japan's. The Asian Pacific includes another group commonly referred to as ASEAN or Association of Southeast Asian Nations: Singapore, Indonesia, Malaysia, Thailand, the Philippines, and Brunei. Australia and New Zealand are sometimes included in discussions of the Pacific Rim, but their economies have not grown as rapidly as their Asian neighbors, and they are also the only countries in the Western Pacific where the United States has a trade surplus.[2]

Almost all of the Asian Pacific economies were hard hit by the world recession in the early 1980s, but they pulled out of it sooner than did the industrialized nations of the West. This recovery is remarkable for two reasons. First of all, these dynamic economies are trade oriented and therefore are dependent on changes in the world market beyond their control. Secondly, Japan and the Asian NICs are almost completely dependent on energy imports, and yet they overcame this dependence at a time when energy prices were rising rapidly.

The Asian Pacific economies are by no means uniform in income levels. Japan, for example, enjoys a per capita GNP comparable to Western Europe's, while Singapore, Hong Kong, and Taiwan have income levels comparable to Eastern Europe. At the other end of the spectrum, Indonesia and China have per capita GNPs of $560 and $300 in 1983, as estimated by the World Bank.[3]

Despite their vast differences, what these economies have in common is a market-oriented economy and an orientation to export-led growth. Furthermore, these societies have a cultural orientation rather

2. See "East Asia and the Pacific," *Business America*, March 4, 1985: 27-35.

3. *World Development Report 1985* (New York: Oxford University Press, 1985), Table 1.

different from our own. The group orientation is stronger than individualism; family and family-like relations are important in business and work environments; governments are generally more authoritarian; management and labor relations are more harmonious than adversarial; and a more anxious view of the future leads to greater savings than in the West.

The combination of these cultural patterns with market-oriented economies and trade orientation to the outside world characterizes the economic success of these nations. To be sure, all is not well. Economic change in the Asian Pacific has produced rising expectations and generational conflicts that threaten to weaken cultural foundations. These countries face problems of political succession that our election patterns solve for us. Bureaucracy frequently interferes with lateral and open communication in ways that most of us would find frustrating.

On the whole, however, these societies are basically healthy, and their economic dynamism is projected to continue into the next century. It appears that they will not only occupy a larger portion of the world's growing economic pie but also expand their share of world trade.

Indiana Exports

Indiana's connection to these opportunities on the Pacific Rim is already in place through existing exports. Because of our land orientation and our distance from both the Atlantic and Pacific Oceans, it may come as a surprise to see just how important international trade is to the Indiana economy. The growth in all exports from Indiana in the decade of the 1970s was fourfold, from $1.3 billion in 1970 to $5.2 billion in 1982 (see **Figure 4**).

According to figures published by the U.S. Department of Commerce, in 1981 Indiana ranked tenth in the nation in the export of manufactured products; in agricultural products, it ranked eighth.

These figures are for states as a whole. Because the leading exporters are states with populations much larger than Indiana's (for example, California, Illinois, Pennsylvania), the real worth of Indiana's exports in per capita terms is much higher. In 1981 it was second in the nation. Between 1977 and 1981, jobs in export-related industries grew faster than jobs in the economy as a whole. In 1981 13.3% of all jobs in manufacturing (140,100) and one-third of all jobs in agriculture (33,300) were export-related. In dollar terms, exports have accounted for one out of every five dollars of sales in manufacturing and one out of every three dollars in agriculture.[4]

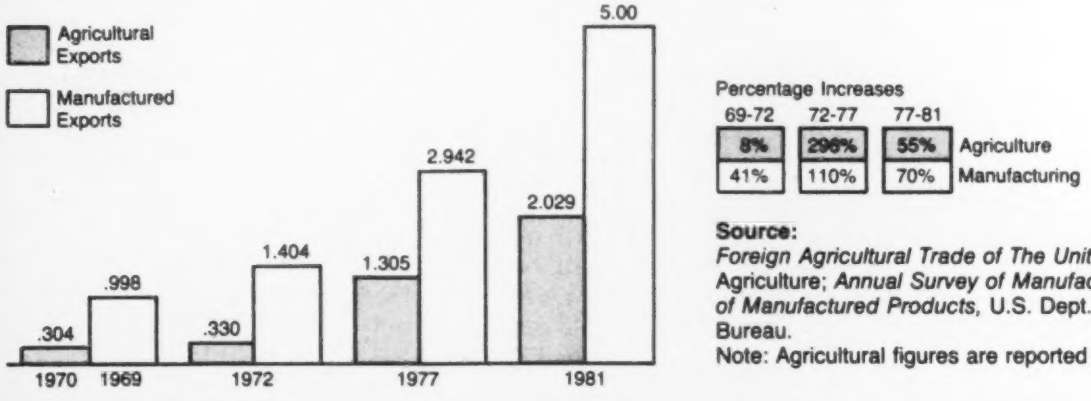
Between 1977 and 1981, jobs in export-related industries grew faster than jobs in the economy as a whole. In 1981 13.3% of all jobs in manufacturing (140,100) and one-third of all jobs in agriculture (33,300) were export-related. In dollar terms, exports have accounted for one out of every five dollars of sales in manufacturing and one out of every three dollars in agriculture.

Since 1981 trade volume for the U.S. and Indiana has continued to grow. But trade opportunities have become problem-

4. *Indiana Exports* (Washington, D.C.: U.S. Department of Commerce, August 1984).

Figure 4

Agricultural and Manufactured Exports for Indiana, 1969 and 1981 (in Billions of U.S. Dollars)



Percentage Increases

	69-72	72-77	77-81
Agriculture	8%	298%	55%
Manufacturing	41%	110%	70%

Source:
Foreign Agricultural Trade of The United States, U.S. Dept. of Agriculture; *Annual Survey of Manufacturing: Origin of Exports of Manufactured Products*, U.S. Dept. of Commerce, Census Bureau.
Note: Agricultural figures are reported on a fiscal year basis.

atic because export trade growth has declined and the trade deficit, estimated at $150 billion for 1985, is almost equal to our total trade volume ten years ago. Here again, the Pacific Rim is important because it is in this market that Indiana's manufactured products are losing their appeal. Half of the total U.S. trade deficit this year will be with the Asian Pacific countries: $50 billion with Japan, $13.9 billion with Taiwan, $4 billion with Korea, and $5.8 billion with Hong Kong.

Indiana has been caught in this trade reversal because the one commodity dominating Indiana exports has been transportation equipment. Vehicles and vehicle parts accounted for one-third of total exports in 1981. Important as this commodity has been since the 1960s, its role in the local economy already had begun to decline by the late 1970s. Indiana exports in car, trucks, and parts accounted for no significant increase in employment between 1977 and 1981. High as our national ranking in manufactured exports was in 1981, it was even higher in 1969, when it was eighth in the nation.[5]

As one of Indiana's smokestack industries, transportation has been severely hurt in the recession and may never recover the growth pattern or relative strength of earlier years. Even more painful is the fact that Japanese car imports account for a large share of the trade deficit.

The six million jobs created by the Reagan administration in the last four years offer some consolation for the economy as a whole, but these jobs have been concentrated in services and high technology, areas where Indiana's economic strength has yet to develop. If the Japanese offered to locate a major automobile plant in Indiana, as they have in Ohio and Tennessee, the plant would be welcome for the jobs it would create. But its contribution to Indiana's export role might be small.

The declining exports in automobiles and heavy equipment, in steel, machine tools, and consumer electronics are offset to a certain extent by a strong showing in other sectors, such as medical instruments. Exports in this field, which were practically nil in 1980, have grown rapidly in recent years. What is remarkable about this development is that it has occurred primarily among smaller companies. Indiana may have as many as 50 such companies whose names are not commonly known.

5. *Indiana Exports* (Washington, D.C.: U.S. Department of Commerce, August 1984).

The declining exports in automobiles and heavy equipment, in steel, machine tools, and consumer electronics are offset to a certain extent by a strong showing in other sectors, such as medical instruments. Exports in this field, which were practically nil in 1980, have grown rapidly in recent years.

Cryogenics in Indianapolis, for example, began exporting only in 1981. At that time its market was almost totally European. In 1983-84, its exports grew by 500% and accounted for 3% of total sales, with 85% of that market lying in the Pacific Rim area. According to Deborah Strong, Cyrogenics' international sales administrator, exports in 1986 are projected to reach 5% of sales.

The success of another small firm is also instructive. Cook Inc., in Bloomington, makes cardiac catheterization equipment. This year it will export approximately $4 million of sales to the Pacific Rim countries. Export sales for Cook, as a percentage of total sales, have been rising about 1% a year over the last eight years. This year they are expected to reach 15%. In the late 1970s exports were largely across the Atlantic. Since the early 1980s, however, export sales across the Pacific have grown an average of 20% per year, while other export sales have leveled off. In 1983 Cook sales to the PRC were a few thousand dollars; in 1985 they are expected to be a quarter of a million dollars. According to Miles Kanne, executive vice president at Cook Inc., in two years sales in the PRC alone are expected to be several million dollars.

This small-firm vitality has spread to other sectors of the Indiana economy. Two Japanese firms in Indianapolis, Uniden and Alpine, produce electronic equipment. In the last four years they have shown impressive increases in new jobs, domestic sales, and exports. Their success helps soften the economic blow that has come with the recent shutdown of a major Indianapolis electronics plant. These new smaller firms, which happen to be Japanese, have an advantage over older American firms because of innovations in product development, marketing, and productivity.

These small firms are becoming truly multinational in capital, in management, and in personnel. Pacific Rim initiatives are not limited to Japan. Korea and Taiwan are playing larger roles in the state's economy. C. Charles Paik, president of International Hardware Merchants, Inc., in Indianapolis, reports a multimillion dollar business this year, exporting computers and related parts to Korea.

What these small firms have in common is innovation, new product development, and aggressive marketing of exports, especially in the Pacific Rim. Their success helps to reduce the pressures for protectionism, and they soften the dislocations created by declines in other sectors of Indiana's economy.

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Foreign Direct Investment

International trade is more than exports and imports. It also includes foreign investments in securities and in manufacturing. The number of foreign direct investments in the U.S. reached a high of 1200 transactions in 1980 and declined to a low of 800 transactions in 1983.[6] In the last two years, however, the U.S. has given

6. *Foreign Direct Investments in the United States, 1983 Transactions* (Washington, D.C.: U.S. Department of Commerce, 1985).

unprecedented attention to the value of FDI from Japan.

The benefits of foreign investments to the U.S. economy can be easily obscured if we focus only on trade in goods and services. Japanese investments in U.S. securities in 1985, for example, have been averaging $5 billion per month. The total for the year was more than the American trade deficit with Japan.[7] Because the incentive for these Japanese investments is the earnings from high American interest rates, the benefit to Japanese investors is obvious. But the benefit to the United States is also considerable. In 1985 these Japanese investments will have financed a large share of the federal deficit.

Another kind of transaction is foreign direct investment or FDI. Although FDIs in the United States this year are only about one-quarter the value of foreign investments in securities, they create new "bricks-and-mortar" projects and new jobs, and they soften the cries for protectionism. Japanese FDI may reduce with time the demand that Japan import finished products in such areas as automobiles and consumer electronics. For 1984, Japanese FDI in the United States exceeded $25 billion, more than two-thirds of the trade deficit of $36 billion for that year.[8]

The prospects of Japanese businessmen locating new plants in Indiana have spurred the Indiana Department of Commerce and local Chambers of Commerce into an appreciation for Japan that is unprecedented in our history. Our business colleagues are discovering how useful the East Asian program at Indiana University can be in providing the cultural dimension that makes location in a particular community attractive to Japanese, Chinese, and Korean firms.

Other Asian investors have also been courted, including the Taiwanese Henry Chen, whose $6.2 million ceramics plant is the first major FDI in Indiana from Taiwan. Backed by K.P.T. Inc., one of the world's most sophisticated floor and wall tile producers, the new plant will spur the revival of an Indiana industry that had almost disappeared 20 years ago. This FDI is a coup for Greene County, blessed with plenty of the right kind of clay, and it promises to pump new life into the economy of south central Indiana.[9]

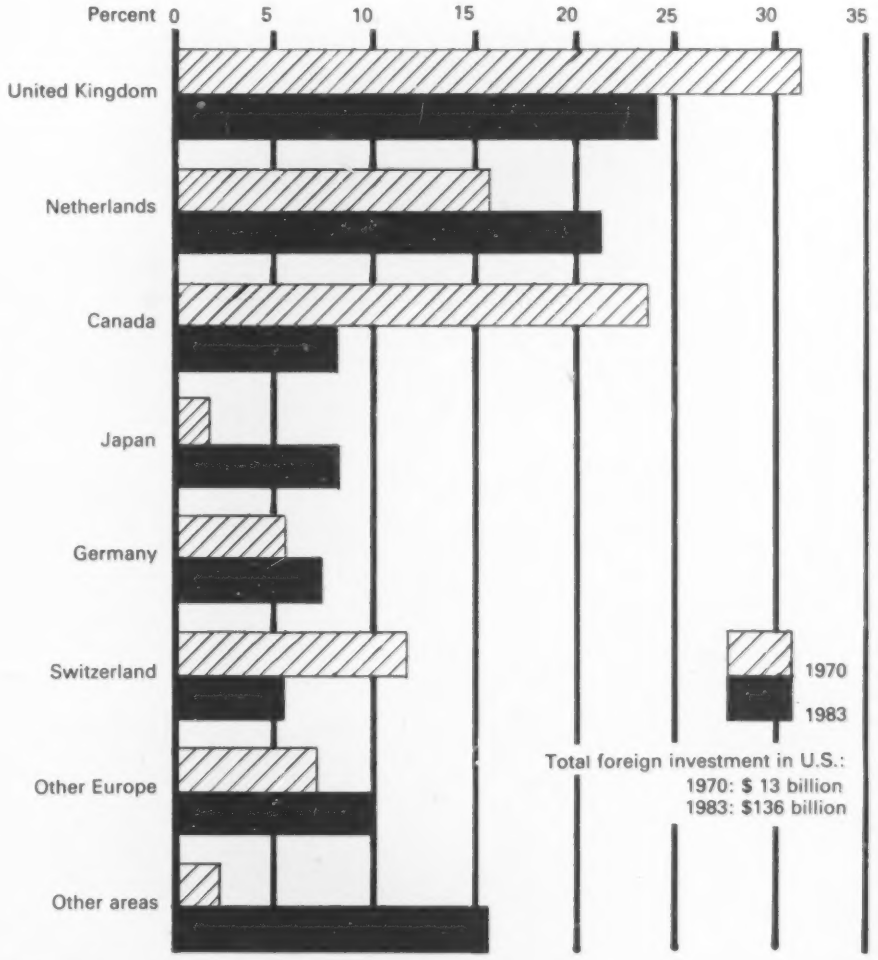
7. *FEER*, September 5, 1985: 52.

8. Data from the U.S. Department of Commerce and Irving Trust Co.

9. Bloomington *Herald-Telephone*, September 18, 1985.

Until recently, FDI in the United States has been largely from our European neighbors. As **Figure 5** shows, the source of FDI has changed radically since 1970, when Canada, the U.K., and the Netherlands accounted for more than 75% of the whole. In 1983, 14% of all FDI in the U.S. was from Japan, a percentage greater than from

Figure 5
Distribution of Foreign Direct Investment in U.S., 1970 and 1973



Source: U.S. Bureau of the Census, 1985 Statistical Abstract of the U.S.

either Canada or West Germany. In 1984 27% of all pending FDI transactions were Japanese. These figures suggest that Japanese FDI by now may amount to more than one-third of the total FDI in the U.S., both in the number of investments and also in dollar value. Japan's FDI figures for 1984 and 1985 are likely to be as high, if not higher, than those for Great Britain or the Netherlands. It appears that local Chambers of Commerce are wooing Japanese FDI more assiduously than any other country's.

These figures suggest that Japanese FDI by now may amount to more than one-third of the total FDI in the U.S., both in the number of investments and also in dollar value.

There are some costs connected with attracting FDI. These include demands on the infrastructure, increased imports of parts and less reliance on local suppliers, and greater competition with local firms in the same industry. The benefits, however, appear to far outweigh these costs. FDI typically brings:

- Expanded employment;
- More high-wage industries;
- Increased tax revenues;
- Links to international R&D; and
- The development of an international market orientation.[10]

The disturbing fact is that there is a large gap in Indiana's performance in the international economy. On the one hand, our national ranking in exports has been among the top ten in recent years. On the other hand, Indiana's ranking in FDI is in the lower half of the nation. In the two-year period from 1982 through 1983, Indiana secured 13 foreign direct investments. The value of known cases was reported at $147 million. **Table 2** shows what might be expected: states with much larger populations and greater resources—for example, California, Florida, Texas, Pennsylvania, and Illinois—secured more FDI than did Indiana.

10. *The Costs and Benefits of Foreign Investment from a State Perspective* (Washington, D.C.: U.S. Department of Commerce, International Trade Administration, August 1982).

The disturbing fact is that there is a large gap in Indiana's performance in the international economy. On the one hand, our national ranking in exports has been among the top ten in recent years. On the other hand, Indiana's ranking in FDI is in the lower half of the nation.

Compared to other states, however, such as Tennessee and Colorado, states with smaller populations and traditionally smaller levels of exports, Indiana's success in this area is less than it might have been. Though completely landlocked, Colorado has attracted three times more FDI than has Indiana. Tennessee has been so successful that in 1984 it was expected to garner 11% of total Japanese FDI in the U.S., a remarkable performance for a state with only 2% of the country's population. Tennessee's success cannot be explained by its geographical location or its political tradition. Lacking a port facility like Indiana's Burns Harbor, Tennessee has only the Mississippi River to connect it with the ocean. Furthermore, its conservatism may be as deeply rooted as Indiana's. As evidence of the multiplier effect of Japanese FDI, Tennessee's 1980 success with Nissan, an investment of almost $2 billion, has been followed by Japanese capital investments in tires and electronics.

Table 2
Location of Foreign Ventures in Representative States, 1982-83

State	Number of Cases	Value (in millions)*
New York	248	$3,387
California	231	4,423
Florida	201	840
Texas	144	3,351
Illinois	65	773
Georgia	52	1,039
Pennsylvania	49	731
Colorado	40	435
Ohio	28	463
Tennessee	19	128
Indiana	13	147

Source: *Foreign Direct Investment in the United States, Transactions,* U.S. Department of Commerce, combined figures for 1982 and 1983. Figures are not strictly comparable to the more detailed figures of the Bureau of Economic Analysis but give approximate number of cases and value of FDI for each state.
* Value is given only when it is known to the Department; actual value may be greater than figure stated.

The Challenge

How are we to explain the gap between Indiana's performances in exports and in FDI? Why is it that the powerful market forces that have served us so well in exports in the past have not been matched by comparable successes in FDI? In other words, if in the past the quality and hard labor of Hoosier workers and farmers and the entrepreneurship of Indiana firms, large and small, have thrust Indiana into the forefront in exports, why haven't these forces yielded more success in this other area of world trade? Could it be that our political and cultural instincts are working at cross purposes with our economic instincts?

These questions have no simple answers, but I would like to offer three observations. The first is the **rapid pace of change in the world economy and in international trade.** In popular parlance, smokestack industries, though still very large, are yielding to more rapid growth in the high-tech and service sectors. Indiana's economy in the 1960s and 1970s rested on its strength in steel and automobile manufacturing, and it has not adjusted to the larger trends that are beyond the state's control.

A second observation is the **lack of coordinated and decisive leadership.** Some significant strides have been made by the Department of Commerce in expanding trade and attracting FDI. Although these efforts are large compared to some states, they are small compared to others. Tennessee might serve as a point of reference, if not a model.

Look at "The Japanese in Rutherford County," a half-hour videotape produced by the Tennessee Department of Commerce. One gets the impression that state, local, and business leaders have planned for the long range and have cooperated in imaginative ways. They have done their homework. They have identified trends in world trade and in the Tennessee economy. They also have carefully cultivated contacts and business relationships with the Japanese. In the words of Lamar Alexander, Tennessee's two-term governor, the state has "got the talk right." Tennessee's leadership apparently has impressed the Japanese with its willingness to invest in providing infrastructural support, with its hardworking and reliable labor force, and also with its sincerity.

A third observation is the **lack of communication between the state's business and government leadership and the academic experts on the Pacific Rim** at Indiana University and other colleges and universities. Our expertise is both economic and cultural. This failure in communication may be due to the failure of the universities to reach out to our colleagues in the state. I would like to think this situation might change. The problem, however, may also be due to the state leadership's lack of appreciation for these resources and this expertise.

A few years ago there was almost no discussion between university experts and business and government leaders on trade and investment opportunities associated with the Pacific Rim. Now there are some beginnings, but they remain ad hoc in nature and peripheral to the decision making both inside and outside the university. If these communications were to become a regular pattern, it would help to improve Indiana's opportunities on the Pacific Rim, both in exports and in foreign direct investment.

Lee Iacocca can serve as a model of responses to the challenge of the Pacific Rim. Until quite recently, Iacocca was often cited as a voice for protectionism and for holding out against the Japanese. His stance appealed to our pride and our self-image as a people who are decisive and take action.

But Iacocca's attitude has changed. In April Iacocca signed a joint venture agreement with Mitsubishi to set up a new car plant that will create 11,300 new jobs and make Mitsubishi a major participant in the American market. Each side will hold 50% equity in the venture. Surprisingly, Chrysler asked Mitsubishi to take the lead in dealing with state and local governments in site selection, in the building of the plant, in dealing directly with unions, and in day-to-day operations. This seems to be a major concession to the Japanese, not just in production but also in management.

"Nobody fought harder than we did to keep the auto restraints," Iacocca admits. "We were right to fight, but we fought the good fight and we lost."[11]

11. Quotations in this section are from "Fairness First: A Level Playing Field for U.S.—Japan Trade," *Speaking of Japan* (Keizai Koho Center), July 1985: 1-8, a printed version of the speech Iacocca delivered at the Japan Press Center in Tokyo on April 17 of this year

Help Available from Indiana University's East Asian Studies Center

We at the East Asian Studies Center stand ready to help Indiana business make the most of the opportunities and challenges that lie within the Pacific Rim.

We have state-of-the-art language programs to aid in breaking down the barriers of communication. Indiana Univers y's "total immersion" summer institute in Chinese, Japanese, and Korean is a program second to none in the nation (though it costs considerably less than others). We can help firms with analyses of the Asian external environment. If requested, we can provide intensive and practical training seminars that illustrate the interaction of cultural and political forces as they bear on decision making in the business world. Such seminars would focus on the appreciation of harmonious human relationships and, above all, respect for the cultural differences of the people who are potential investors, partners, and markets. In Lee Iacocca's words, we are prepared to play a part in doing "whatever it takes." **Philip West**

The new rules gave the Japanese an advantage of more than $2,000 per car. Says Iacocca, "The conclusion was crystal clear: we need a greater reliance on our Mitsubishi colleagues to compete in the low end of the U.S. market."

Market share was Iacocca's concern. "When we were going broke," he says, "our market share got as low as 8%. We've fought like tigers to get it up to 12.5% today. We need that share to succeed, and we're going to do whatever it takes to keep it."

Lest anyone attempt to balance the auto industry's difficulties with hopes for high technology, Iacocca says bluntly, "I don't think high tech is going to save us." He notes that in the last four years foreign (mainly Japanese) penetration of the U.S. computer market has quadrupled; in semiconductors, it has more than doubled.

The opportunities on the Pacific Rim are clear. Responding to the challenge includes pressing forward with our Asian colleagues on issues of fair trade. But it also means doing what Chrysler has done and beginning to think globally. The issue is economic value added, which means greater cooperation with the Japanese, the Chinese, the Koreans, and our ASEAN colleagues. It means sharpening our competitive edge by tapping into, not opposing, their resourcefulness. This cooperation goes beyond the development of new export markets and larger FDIs—although we need to work harder on those, too. Cooperation can also mean licensing agreements, joint R&D centers, parts and components sourcing, joint ventures, and even acquisitions.

The business sector knows what needs to be done on the production end. My colleagues and I can be of some help in providing a long-term perspective that avoids counterproductive outbursts of frustration. These outbursts range from shortsighted protectionism to the early terminations of Americans working in the different cultural environment of the Asian Pacific. Perhaps the largest pitfall to avoid is gearing up for quick profits instead of taking the Asian markets seriously. □

Trade Between Selected Pacific Rim Countries and Its Share of Their Total Trade — 1970, 1976, 1982
(In Million US Dollars)

FROM/TO	YEAR	US	JAPAN	AUSTRALIA/ NEW ZEALAND	HONG KONG	KOREA	TAIWAN
US	1970	—	4652	1120	406	637	527
	1976	—	10150	2600	1115	2015	1635
	1982	—	20966	5431	2453	5529	4107
JAPAN	1970	6015	—	704	700	818	700
	1976	15927	—	2730	1843	2828	2283
	1982	36546	—	5486	4707	4869	4315
AUSTRALIA/ NEW ZEALAND	1970	520	1374	363	98	13	39
	1976	1531	4852	978	243	205	166
	1982	3043	6407	1884	501	792	650
HONG KONG	1970	897	178	90	—	17	50
	1976	2480	595	388	—	98	233
	1982	6040	941	661	—	319	275
KOREA	1970	395	236	4	28	—	7
	1976	2498	1802	110	325	—	84
	1982	5981	3368	380	900	—	210
TAIWAN	1970	567	215	21	135	28	—
	1976	3060	1102	234	610	73	—
	1982	8732	2370	696	1550	193	—
CHINA, PRC	1970	0	231	40	425	0	0
	1976	201	1248	114	1448	0	0
	1982	1741	4756	252	5117	0	0
BRUNEI	1970	0	0	16	0	0	1
	1976	142	901	0	0	0	44
	1982	199	2390	9	1	131	41
INDONESIA	1970	144	452	40	11	0	0
	1976	2452	3565	34	24	152	131
	1982	3533	10298	966	116	592	235
MALAYSIA	1970	219	309	46	21	44	21
	1976	826	1119	140	66	95	71
	1982	1266	2463	262	209	446	427
PHILIPPINES	1970	433	418	5	13	32	17
	1976	926	625	52	39	23	44
	1982	1580	1145	95	197	151	57
SINGAPORE	1970	172	118	59	63	11	12
	1976	965	676	404	513	74	67
	1982	2612	2262	1142	1751	317	136
THAILAND	1970	95	181	5	53	2	35
	1976	299	769	32	149	30	91
	1982	864	955	96	309	78	96
PACIFIC IMPORTS	1970	9457	8364	2513	1953	1602	1409
	1976	31307	27404	7816	6375	5593	4849
	1982	72137	58321	17360	17811	13417	10549
TOTAL IMPORTS	1970	38811	15543	5334	2928	1907	1673
	1976	117631	57520	13956	8471	8035	6853
	1982	230034	114006	27950	22898	20986	17074
PACIFIC IMPORTS AS % OF WORLD	1970	24.37	53.81	47.11	66.70	84.01	84.22
	1976	26.61	47.64	56.00	75.26	69.61	70.76
	1982	31.36	51.16	62.11	77.78	63.93	61.78

Source:
Direction of Trade Statistics Yearbooks, 1970-76 & 1983, International Monetary Fund; *The Trade of China (Taiwan District), 1982.* Inspectorate-General of Customs, Taiwan.
Note: Figures are reported FOB. Conversion rate used for Taiwan dollar in 1982 US$1 = NT$39. Singapore's exports to Indonesia are not published.

CHINA PRC	BRUNEI	INDONESIA	MALAYSIA	PHILIPPINES	SINGAPORE	THAILAND	PACIFIC EXPORTS	TOTAL EXPORTS	PACIFIC EXPORTS AS % OF WORLD
0	0	264	67	373	240	150	8436	43231	19.51
135	32	1036	536	819	965	347	21385	115413	18.53
2912	79	2025	1736	1854	3214	915	51221	212274	24.13
569	10	316	167	454	423	449	11325	19318	58.62
1666	32	1641	705	1115	1533	1072	33375	67320	49.58
3500	144	4251	2496	1799	4357	1903	74373	138443	53.72
133	14	44	80	57	112	37	2884	5999	48.07
288	2	248	257	158	280	77	9285	15946	58.23
927	5	472	479	251	808	186	16405	27589	59.46
11	5	46	33	16	102	24	1469	2515	58.41
30	5	176	102	92	353	112	4664	8526	54.70
1939	14	820	198	376	918	199	12700	20896	60.78
0	0	3	1	1	11	5	691	839	83.36
0	0	49	18	29	78	24	5017	7715	65.03
197	44	432	270	178	429	110	12499	22251	56.17
0	1	32	12	16	36	25	1088	1425	76.35
0	1	219	54	78	213	80	5724	8156	70.18
0	17	422	222	234	574	216	15226	22126	68.81
—	3	30	68	0	114	0	911	1680	54.23
—	6	120	122	51	243	65	3618	6045	59.85
—	4	45	179	233	625	166	13118	21632	60.64
0	—	0	83	0	1	0	101	101	100.00
0	—	0	74	2	20	0	1183	1333	88.75
0	—	0	1	71	203	17	3063	3171	96.60
0	0	—	36	26	172	0	881	1108	79.51
0	0	—	23	90	644	2	7117	8546	83.28
106	0	—	61	207	1050	32	17196	20004	85.96
22	10	11	—	29	364	15	1111	1687	65.86
45	37	23	—	80	967	68	3537	5297	66.77
141	32	39	—	117	3033	348	8783	11789	74.50
0	0	2	0	—	7	3	930	1043	89.17
38	0	12	5	—	56	7	1827	2574	71.00
105	4	55	178	—	111	14	3692	5010	73.70
23	25	NA	340	4	—	51	878	1554	56.50
39	97	NA	1005	52	—	197	4089	6594	62.01
240	359	NA	3669	323	—	799	13610	20787	65.47
0	0	16	40	1	49	—	477	710	67.18
61	4	154	126	30	202	—	1947	2980	65.33
368	9	142	379	33	477	—	3806	7040	54.06
758	68	764	927	977	1631	759	31182	81210	38.40
2302	216	3678	3027	2596	5554	2051	102768	256445	40.07
10435	711	8703	9868	5676	15799	4905	245692	533012	46.10
1730	71	1051	1402	1315	2320	1152		75237	
4731	257	5403	4091	3938	8937	3435		243258	
16827	828	14051	12547	8460	27212	7804		520677	
43.82	95.77	72.70	66.12	74.30	70.30	65.90		41.44	
48.66	84.05	68.07	74.00	65.92	62.15	59.71		42.25	
62.01	85.87	61.94	78.65	67.10	58.06	62.85		47.20	